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FIGHTING THE COTTON WORM

(*Alabama Argillacea* Hubn.)

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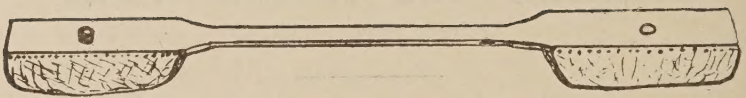

Fig. 1.—Dusting Pole and Bags for Poisoning Cotton Worms.

FIGHTING THE COTTON WORM

THE DUSTING OUTFIT.

The simplest possible method for destroying cotton worms, is to apply a dry poison like Paris green, or better, powdered Arsenate of Lead, dusted through bags carried at the ends of a pole or piece of narrow board, by a man riding a mule. This covers two rows at a time and 15 to 20 acres can be treated by one man in a day. On moonlight nights the work might probably be continued in cases of emergency.

Where many acres are to be treated, at least two poles should be provided for each rider, and an extra helper can then keep one filled and ready for each man to change without waiting when they reach the end of their supply. A very convenient arrangement, as shown in Fig. 1, may be made from a piece of 1 x 3 inch board. The length should be from 12 to 18 inches longer than the distance between cotton rows. A large hole is bored in each end through which the poison can be poured by using a large funnel. These holes are closed with plugs or stoppers after the poison has been put into the bags thus preventing any spilling or waste of the poison. The bags should be tacked to the ends lengthwise instead of hanging straight down. This gives a better distribution of the poison over the rows.

Various kinds of cloth may be used to make the bags. If cheese cloth is used, it will require several thicknesses to hold the poison so as not to give it out too fast. Old flour bags, drilling or duck, may also be used. In any case, determine how much poison is to be applied and whether it is to be used alone, as in the case of Arsenate of Lead or with some flour as with Paris Green. The amount of poison distributed will depend upon the tightness of the cloth and the amount of jar or shaking given the pole. For dis-

tributing poison at the rate of three pounds per acre, a rather tight cloth should be used and frequent light taps on the pole will give far more even distribution than will an open cloth and occasional heavy shakings.

A spring balance weighing up to twenty pounds is a convenient help in keeping close track of the amount of poison being put out. Weigh the whole outfit, pole, bag and poison, after the poison has been put in and it is ready for the rider. After half an acre (an acre is 70 x 70 yards) or any known area is covered, weigh again. The difference in weight shows just exactly how much poison has been put out on that area and if too much is gone for the rate desired, either use heavier cloth for the bags, add another covering of thin cloth or try lighter jarring. If Paris green is being used, the proportion of flour to poison may be increased. If too little poison is going out, jar more heavily or use a lighter weight or more open cloth.

WHAT POISONS CAN BE USED?

There are practically only two poisons for the man without a spraying outfit to choose between: Paris green and powdered Arsenate of Lead. London purple has been used sometimes but it is too likely to seriously burn the plants and cannot be recommended except possibly as a last desperate resort when neither of the others can be secured. The man with a spray pump can use several other materials such as Arsenate of Lead paste, Arsenite of Lime, etc.

Paris green is the oldest and best known material used for poisoning caterpillars. It may be obtained in small quantities of local dealers, but if needed in lots of 100 pounds or more, orders will usually have to be filled through wholesale druggists in the larger cities or ordered directly from the manufacturers. Paris green should be applied at the rate of about one pound of the poison per acre. Unless evenly applied it is liable to burn the plants which are dusted most heavily with it. To dilute it some-

what and especially to aid it in sticking to the plants, we advise using two pounds of flour with each pound of Paris green. Two pounds of flour will provide all the paste needed and more is just so much extra expense and waste. The flour does not prevent the burning at all but does form a paste which holds the poison on the plant better through dews and light rains. Heavy rains will wash it off the plant anyway. If a rain falls within twenty-four hours after Paris green is applied, it is likely that the treatment will have to be repeated to destroy the worms.

The difficulty in many cases may be to get Paris green at all. In any case we cannot recommend the use of Paris green as strongly as we do the next material which is a newer and less widely known insecticide.

Powdered Arsenate of Lead was first made only a few years ago. It is a very fine white powder having about one-half the amount of arsenic in it that is in Paris green and should therefore be used at least twice as strong as we use Paris green to secure the same killing power. It never burns even if applied to foliage in heavy doses and sticks to the leaves very well in spite of rains. It seems to be so very fine that it gets into the small depressions on the leaves and the water runs over it. We therefore advise a dose of three pounds of powdered Arsenate of Lead per acre when this can be secured in place of Paris green. No flour or any other material is needed in this case. Closely woven bag cloth should be used with this very fine material. It is easier to apply this Arsenate of Lead evenly than it is with Paris green and flour.

WHEN SHOULD POISON BE APPLIED?

Watch your cotton closely and frequently for the first signs of worm work. These usually occur in the low, wet places where the cotton is rank. The cotton worm feeds on no plant but cotton and few other worms do a similar work in "ragging" the leaves or stripping the plants. The "first crop" of worms will usually appear in spots through the field and not attacking all parts uniformly. The worms should be poisoned at once whenever and wherever they are found to be "ragging" the tops of the plants. At the time of appearance of the "first crop" it will not pay usually to treat the whole field unless the worms are found scattered through it. If the "first crop" appears in considerable numbers during the last of July or first of August and if

the season is rather wet and cotton rank and thrifty, then there is great likelihood of extensive damage from the "second crop" which may appear in from 10 to 15 days after the worms of the first crop spin up. Every preparation should be made in advance when such conditions occur so that the whole cotton crop may be treated without a single hour of avoidable delay. Make the dust poles, have the bags ready and the stock of poison on hand. Such preparation is essential to the best success in controlling these worms. One dollar expended in poisoning caterpillars during August may save from $10 to $100 loss in the crop. It pays to kill the worms early.

IS THERE DANGER IN POISONING?

Frequently we hear the idea expressed that it is dangerous to use any such poison. Fortunately the danger involved is far more imaginary than real. Of course any poison should be kept safely stored where children and farm animals cannot possibly get to it. There is no real danger to a person in handling such dry poison provided they keep it out of their mouths so as not to swallow it. If sores or scratches are present cover them closely with plaster or with a greased cloth to keep the poison out. The only effect of poison on open sores is to aggravate them but there would be no danger of fatal results in such a case. If a breeze is blowing so that considerable of the dust must be breathed, tie a handkerchief closely over the mouth and nose to keep the dust out. Do not swallow the saliva after clearing the throat when applying poison. With these simple precautions there is no danger whatever to the user. The only serious result possible must come through the stomach. After the work each day, curry the dust out of the mule's coat and rub him over with a wet cloth to guard against sores forming from the retained poison. There is little if any danger that stock may be poisoned from eating the treated foliage and no danger at all after a few weeks time. There is very little danger of rains carrying the poison to streams from which cattle may drink and no chance whatever of injuring the soil.

CAN FIRES OR TRAP LANTERNS BE USED?

Light or fire traps may be used as an aid in reducing the number of moths, but can never be depended on to take the place of poisoning. Bonfires will attract many

moths, but the heat is great enough to repel most of them before they get singed and killed. Trap lanterns work better than bonfires. Ordinary lanterns may be used for this work. On a barrel or some other arrangement to hold the light higher than the tops of the cotton plants, place a pan half full of water and with kerosene or coal oil enough to cover the surface Put a block of wood, a brick or similar arrangement in the middle of the pan to set the lantern on and let it burn all night. Start these lights within a week after the worms "spin up" and continue them as long as numerous cotton moths are caught. Be sure that you are getting cotton worm moths. To prove this, put a few of the leaves in which worms have "spun up" under a tumbler in a shaded place and watch for the moths as they come out of the webs. A great many kinds of moths are attracted to lights and so there are certain to be many moths caught which are not real cotton worm moths. Close comparison of those caught in the trap with those bred in the tumblers will show whether the traps are really worth continuing. In any case they can be only "helps" in addition to poisoning.

SUMMARY.

Have ready two dusting poles for each rider, the supplies of poison, flour, etc., a funnel to fit into the holes for filling the bags with poison and a spring balance or other provision for weighing to keep track of the amount of poison being applied. Secure a supply of poison and keep it on hand ready for immediate use. Use one pound of Paris green and two pounds of flour per acre or three pounds of Arsenate of Lead alone. Apply immediately when and where the worms begin to "rag" the leaves. The most prompt treatment is most profitable. There is no real danger of poisoning to the person using these insecticides unless some of them get into the stomach.

Stock will not be poisoned even by eating the foliage after a few weeks and there is very little chance of poison being washed into drainage streams in sufficient quantity to affect stock drinking the water. Trap lanterns may help by catching moths, but THE MAIN THING IS TO BE READY TO POISON WITHOUT DELAY WHEN THE WORMS APPEAR. ONLY PROMPT POISONING WILL SAVE THE COTTON AND PREVENT GREAT LOSS.

CIRCULAR No. 10, APPENDIX A.

Addresses at which Poison for Cotton Worms Can be Secured.

POWDERED ARSENATE OF LEAD.

Grasselli Chemical Co., Birmingham, Ala., or New Orleans, La. This Company has established several distributing points and can probably ship supplies from Birmingham, Selma, Marion, Tuscaloosa, Epes, Talladega, Pell City, LaFayette, and Montevallo.

PARIS GREEN AND POWDERED ARSENATE OF LEAD.

In small quantities these may be obtained from many local druggists. For large lots of 100 pounds or more, address Durr Drug Co., Montgomery; Van Antwerp Drug Corporation, Mobile; Cowthon & Coleman Co., Selma; M. A. Ellison, Dothan, or other wholesale drug dealers in the larger cities.

This list of addresses is purely suggestive and by no means complete. Watch the papers for advertisements of supplies of these poisons.